VOL. 3 MARCH • 1931 NO. 10

Montana Wild Life

DEER AT PLAY IN GLACIER PARK

OFFICIAL PUBLICATION
MONTANA STATE FISH & GAME DEPARTMENT

Campfire's Light

By H. W. Irum, Whitefish, Montana

WHEN you light your pipe, by the campfire's light,
At the end of a day on the trail—
Your bed's made down on the softest ground,
Where your tent looms up like a sail.
The noise of the creek as it tumbles along,
The croon of the wind in the trees,
While stars shine bright on a perfect night,
If mosquitoes are lulled by the breeze.
You have stood a test and earned this rest,
For the trail was hard and long,
And the weight of the pack that hung on your back
Was lightened by your song.
The thin veneer you wore at home
To show you were one of the mode
Has been washed away by the sweat of the day
As you carried your share of the load
You settle down and forget the pack,
The heat and the toil of the day;
As the shadows of night steal soft about,
Only stopped by the fire's ray.
Then tales are told of a different mould
Than those one hears at home,
As you picture there by the fire's glare
The trails you have longed to roam.
The cares of life, the struggle and strife
Are lost in the fire's glow,
And dreams seem more true, as the smoke curls blue
And the sound of your voice is low.
The fire burns low and your pipe goes out,
It's time to hit the hay;
So you look at the sky and pretend to try
To forecast the weather next day.
And as years roll by you will often try
To remember this night of ease,
When cares rolled away with the end of day,
The fire, the stars and the trees.

MONTANA WILD LIFE

The Official Publication of The State Fish and Game Commission

VOL. III HELENA, MONTANA, MARCH, 1931 No. 10

Shortage of Funds Hits Wild Life Work

PORTSMEN'S funds in the State Fish and Game Department are at such a low mark that activities for the next five months must be crippled, handicapped or carried on in such manner as will permit existence rather than activity, and Montana's State Fish and Game Commission voted at the meeting of Feb. 11 at Helena to suspend seven deputy game wardens and four fish culturists, reduce the expense allowance of every deputy to $50 per month, and curtail every contemplated project until more adequate funds are made available. The reduction of the number of deputies throughout the state means that 20 men will be required to patrol more than 145,000 square miles within the state until next June, at least, or an average of 7,025 square miles per deputy. This action was taken, as emphasized by the commissioners, because of the emergency existing and the necessity for keeping the department in some sort of running order until normalcy in funds is restored. Legislation is now before members of both houses intended to relieve this situation.

Announcement was made by the commission that a hearing will be held on the suspension of M. L. Matzick, superintendent of the hatchery at Somers, the decision to be as to whether the suspension will be made permanent or Matzick restored to the service.

The request from the Anaconda Anglers' Club, asking the commission to open Storm lake, in Deer Lodge county, to ice fishing, inasmuch as the lake is infested with bull trout, was approved during the regular open season, until further order of the commission.

A request from Representative Sylvan Pauly and residents of the Ovando district was presented for the opening of Cooper's lake in Powell county to ice fishing, and the commission ruled that the lake be opened to fishing through the ice during the regular open season until further order of the commission.

Secretary Hill read a request from J. R. Van Horn, of Devon, for the opening of the Great Northern reservoir at Devon to ice fishing. He also read protests and in view of the protests the request was denied.

The secretary read a request from Charles Chapel, of Troy, for the opening of Flathead lake to commercial fishing for whitefish, but it was denied, in view of the fact that past experiments have proven unsatisfactory.

Rearing Cost of Pheasant, $1.27

WHAT is the cost of rearing a Chinese pheasant at the state game farm at Warm Springs? For months, this matter has been the subject of much debate where sportsmen gather. Eastern publications have placed the figure as high as $7—and with three male birds as the Montana limit, that would mean $21 per bag.

J. L. Kelly of Anaconda, member of the State Fish and Game Commission, in whose territory the state game farm is located, has brought matters down to a fine point, however, and declares that the average cost of rearing a Chinese pheasant in Montana was $1.27 4/5 in 1930. The State Fish and Game Commission liberated 6,146 Chinese and Mongolians in 55 counties of Montana last year. These birds were hatched with 781 domestic setting hens. Six acres is completely under wire at the state game farm and there are now 392 pens, each of which will accommodate 25 birds. Enlargement and improvements are contemplated because of the increasing demand. Joe F. Hendricks is superintendent.

Mr. Hill presented a petition from residents of Liberty county, asking that the Marias river be opened to fishing during the entire year. It was denied.

Mr. Hill read letters from the Conrad and Valier Rod and Gun clubs, asking that Dupuyer, Sheep, Scoffin, Birch and Big Badger creeks, in that vicinity, be closed to fishing until the beginning of the regular open season, May 21, in view of the fact that it is impossible to enforce the law with reference to fishing through the ice in these streams. Because of the late date and the fact that the regular closed season begins March 14, and the order would have to be published for 15 days before it would be effective, the sercretary was authorized to advise these clubs that this order would be of no particular benefit.

R. W. Spangler, representative from Mineral county, presented a request from citizens of Mineral county for the opening of the Missoula river to ice fishing for whitefish. Mr. Marlowe presented a similar petition from citizens of Alberton. On motion of Mr. Kelly the Missoula river, also called the Clarks Fork of the Columbia, in Mineral and Sanders counties, was opened to ice fishing for whitefish, and the regular closed season on this river in these two counties was suspended until further notice of the commission.

Insurance was ordered carried on the motion picture films of wild life made by Mr. Fair.

An elk head confiscated by Deputy Holmes some years ago, mounted by Mr. Noyes, taxidermist, was loaned to the Billings Rod and Gun Club until further action of the commission.

The Choteau Rod and Gun Club asked that a fish ladder be installed in the Bynum canal which leads to the Bynum-Teton reservoir. It has one fall of approximately 20 feet, a menace to the fish, and K. F. MacDonald and Commissioner Boyd were instructed to investigate.

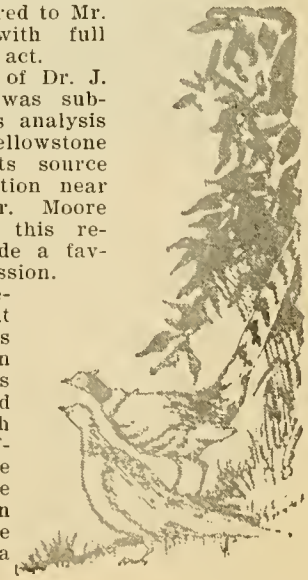
A request was read from the Hill County Rod and Gun Club for the construction of two rearing ponds in Hill county, two rearing ponds in Chinook county, and the creation of an artificial lake west of Havre. On motion of Mr. Kelly all requests for rearing ponds, artificial lakes, and construction work of a similar nature were tabled until a later date, due to lack of finances in the department.

C. S. Seabrook of Richmond, Calif., who is doing interesting and valuable research work in the breeding of migratory waterfowl, asked the commission for permission to collect a few eggs in this state, and Secretary Hill was instructed to write to Harry Cosner, deputy at Malta, to get a few duck eggs for Mr. Seabrook.

Stanley Thurston of Polson, Mont., asked permission to set a net in Skidoo bay to take whitefish eggs for the commission and the matter was referred to Mr. MacDonald with full authority to act.

The report of Dr. J. W. Howard was submitted on his analysis of the Yellowstone river, and its source of contamination near Billings. Mr. Moore advised that this report had made a favorable impression.

Mr. Hill reported that state senators from Sheridan and Daniels counties had conferred with him with reference to the protest of the commission against the creation of a



Federal refuge in Medicine Lake. It was the opinion of those senators that if the government did take over this lake, they would do extensive building, flood a large area of land, and do some beneficial work. Mr. Marlowe stated that the state has such a few natural places for the hunting of ducks that he is not in favor of the Federal government taking over natural bodies of water for Federal refuges, but that there are many places in the state where the Federal government could do construction work and make artificial bodies of water, which would prove more beneficial.

Warden Hill advised that on Feb. 1, 1931, there was $20,544.24 in the Fish and Game fund. The income of the department will be negligible until the new licenses are sent out, the income of the department during February, March, April and May, of 1930, being only about $50,000, while the disbursements during these months were $71,493.62. Using the year 1930 as a basis of comparison, Mr. Hill suggested that there will be a deficiency of $20,000 before the new revenue comes in. Methods of curbing expenditures were discussed, and the matter was continued until later in the meeting.

Mr. Marlowe read a letter from Dr. E. D. Peck of Missoula, asking that Clear creek, a tributary to Prospect creek, in Sanders county, be closed to fishing for two more years, and the request was granted.

Mr. Marlowe presented a letter from the Flathead Game Protective Association, asking that the Flathead river in Flathead and Lake counties be open to ice fishing this winter, due to the fact that there are many needy families who could secure food for their families if it were open. There are few trout in the river, and many whitefish. The request was granted.

Chairman Marlowe advised that there are many pot holes in Lake county which have been stocked by the commission with warm water fishes, and suggested opening them to fishing. The plan was adopted.

K. F. MacDonald, superintendent of fisheries, recommended that the salary of Dr. Treece be fixed at $150 per month, with expenses when on field work, and the commission approved.

Mr. Kelly reported that he had figured the cost of the birds at the State Game farm at $1.27 8/10 per bird, before liberation.

Mr. Marlowe read a letter from the Bureau of Fisheries, wherein they expressed a desire to co-operate with the State Department as much as their funds would permit, in installing fish screens in this state.

Mr. Marlowe advised that he had had correspondence with the Cascade County Trade and Labor Assembly, and with O. S. Warden of the GREAT FALLS TRIBUNE, relative to the proposed increase in license fees, and that Mr. Warden had been fair in disseminating the information in Mr. Marlowe's letter through his paper. Mr. Warden, in his reply to Mr. Marlowe's letter, stated that the Cascade county sportsmen feel that they are entitled to some aquariums at the Great Falls hatchery and rearing ponds in the Dearborn river. He also requested that, if the department has an exhibit this fall, it be shown at the Great Falls fair. Mr. Boyd advised that he and Mr. Stubblefield had been inspecting sites for rearing ponds on the Dearborn, but due to the nature of the soil in that vicinity, rearing pond sites were difficult to find. On motion of Mr. Marlowe, Mr. MacDonald, Mr. Boyd and Mr. Warden of the GREAT FALLS TRIBUNE, and any other interested party, will inspect and look into the advisability of constructing rearing ponds on the Dearborn river when funds permit. Mr. Marlowe also proposed that, at the same time or whenever possible, this same committee investigate the feasibility of putting in aquariums at the Great Falls hatchery, ascertain the cost and report to the commission the cost, and the results of their findings.

Mr. Wilson presented requests from sportsmen in his vicinity, asking the commission to permit the sale of whitefish taken from the Yellowstone river, because of conditions at the present time. The motion was laid on the table.

Mr. Wilson advised that if the commission so desired, he would negotiate for land adjacent to the park, owned by the Northern Pacific Railway company, for grazing of game animals. At the present time, these lands are leased for sheep grazing. Mr. Hill advised that the Northern Pacific had written him that they did not care to change leases on this land, but Mr. Wilson explained that he would like to negotiate for the land. There are 3½ sections in this particular area, for which the Northern Pacific is now receiving $175 rental annually. Mr. Wilson was authorized to take up this matter with railway officials, and if it is possible to secure this lease for the department at the figures mentioned by him, that he be authorized to make negotiations for the commission to enter into such a lease.

The question of the finances of the department was again discussed during the afternoon and the following order was made on motion of Commissioner J. L. Kelly:

"Because of the lack of funds in the Fish and Game Department, and because a retrenchment is absolutely necessary, I move that the services of the following wardens: Frank Beller, William C. Gird, John E. Plank, J. J. Meany, Frank M. Snider, Harry Cosner and Frank Marshall be dispensed with, effective March 1, 1931, until June 1, 1931, or until such time as the revenue of the department is sufficient to continue their services; and that in the fisheries department, the services of Elmer Young, watchman at Station Creek hatchery; T. E. Day, W. D. Dedrich, at Libby, and A. M. Adkins, at Emigrant, be discontinued, effective March 1; and that all salaried deputy game wardens be limited to $50 per month expenses during the months of February, March, April and May."

Champion Tree Sitter

This business of competing for the championship of tree sitters among boys of the nation is old stuff in Montana's forests, according to Bre'r B'ar and his associates. This black boy is roosting on a comfortable limb permitting the rest of the world to go by.

BIRDS IN WAR CAMPS

Camps where millions of men trained for war may soon furnish peace and protection to game birds and animals. The first step in this direction, taken recently when Major General Dennis Nolan created a game sanctuary of 13,000 acres at Camp Knox, near Louisville, Ky., has been followed by concerted appeals from nearly every state game commission and many sportsmen's organizations for similar measures at all the other military reservations existing in numerous states.

A meeting of leading conservationists to prepare a plan to submit to President Hoover and the War department has been urged by Judge R. W. Bingham, publisher of the Louisville Courier-Journal and the Louisville Times, whose editorial campaign for the movement has attracted nationwide endorsement of the idea from game experts.

"If all military reservations were made permanent game sanctuaries by a general order from the secretary of war, the whole country would reap benefit at no cost to the government," said Seth Gordon, president of the American Game Association.

Rastus: "Ain't 'at hoss eber done kicked yuh?"

Kingfish: "Naw, chile, not yit, but he frequently kicks at the place whar Ah recently wuz."

What Is the Speed of a Coyote?

THE coyote, known to many Montana residents as Senor Yip Yap, is considered a predatory animal and is killed on sight by members of the rangers force, according to an interesting article in the current number of Yellowstone Nature Notes, written by Joseph Joffe, assistant to the superintendent.

"There is no intention whatever of exterminating this cunning mammal," writes Mr. Joffe, "which would probably be impossible anyway, but the park policy permits of reducing its numbers to a point where it will not be a menace to the young of the elk, deer and antelope.

"On Dec. 30, Mrs. Joffe and I were en route to the buffalo ranch by automobile. This road is usually closed long ere this date but this year, on account of the shipping of buffalo, a grader was used to clear out the snow. There has been only one snowstorm in the park since the road was first cleared out, which added about three inches to the already 13 or 14 inches which covered the ground in this vicinity. The trucking of the buffalo and other travel to the buffalo ranch had made a well-worn road in the snow and it was possible to attain considerable speed.

"Upon rounding a curve near Lake LaCombe between Tower Falls and the buffalo ranch we suddenly came upon two coyotes talking over what Santa had brought them and what the New Year held in store, for the holiday season was on. Immediately upon seeing our car they split, as always seems to be their custom, one going to the left, following a game trail, and the other to the right, following the well-worn road. I immediately picked up speed and followed the one in the road.

"Mrs. Joffe watched the speedometer and at no time did it record less than 25 miles per hour. The maximum was 35 and I kept the car in between these speeds. There are a number of curves in the road and Mr. Coyote had plenty of opportunity to get out into the deeper snow and let me go by him. However, he persisted in staying in the road and he afforded us a thrill that we will probably never experience again. He looked like a big police dog racing in front of the car and his running was indeed beautiful.

"When I would 'step on the gas' he would let out a little more steam and his feet must have been hot from the number of times they came down on the hard snow. On two occasions I felt as if I could have run over him, but I admired his endurance and beauty and thought of John Colter running 'for his life' from the pursuing Indians.'

"At one time, when I was almost upon him, I blew the horn—he suddenly reeled, made a dash at the car, but quickly turned and continued his running. The last time I blew my horn he jumped out of the road and his danger was over. He immediately reversed his direction and sped back over the road he had just traveled but shortly took to the snow, over a knoll and out of sight.

"On our return from the buffalo ranch later in the day we recorded the distance on the speedometer and found that we had traveled 1.6 miles in pursuit of this animal.

"Ernest Thompson Seton, in his book, 'Life Histories of Northern Animals,' gives a table showing the best speed for a mile for some members of the animal kingdom, which I am stating below:

Race Horse	34
Pronghorn Antelope	32
Greyhound	30
Texas Jackrabbit	28
Common Fox	26
Northern Coyote	24
Foxhound	22
American Grey Wolf	20

"Mr. Seton has gathered his information from various sources but I am convinced that the coyote should be placed higher in the list and 'my hat is off to him'—1.6 miles at a speed of from 25 to 35 miles an hour!"

Review of Laws In Next Edition

THE April edition of MONTANA WILD LIFE wil include as one of its features, a complete review of fish and game legislation acted upon by the 22nd Montana assembly now in session at Helena. At the close of the fiftieth day, Feb. 23, when the bars were put up against transmitting any further legislation from the house to the senate, 10 measures intended to revise the fish and game laws had been killed. Sixteen fish and game measures of merit remain on the total list of 26. Of these, two have been signed by Governor Erickson. The two bills signed are those creating the Little St. Joe game preserve in Mineral county and the measure correcting the existant law relating to unlawful possession of fish and game. Watch for the April number of MONTANA WILD LIFE for the legislative review.

WITH AND WITHOUT

"Give me a glass of plain soda water without flavor."

"Without what flavor?"

"Oh, I'll take it without vanilla."

"You'll have to take it without chocolate. We ain't got vanilla."

Big Timber Club Kills Predatory Animals

MONTANA sportsmen interested in the conservation and propagation of the wild life heritage of the state are equally interested in the destruction of predatory birds and animals which act as a menace to game. Few clubs of sportsmen have accomplished such results in predatory animal drives as the Big Timber Rod and Gun club. In the picture shown above, members of the club are seen with the catch made in November alone. During that month the total kill was 114 coyotes, 4 bobcats, 39 weasels, 194 magpies, 4 hawks, and 5 owls. In December the catch included 34 coyotes, 1 bobcat, 24 weasels, 8 owls, 1 hawk, and 90 magpies. The work was accomplished in co-operation with the Smith-Hughes class of the Big Timber high school. The picture is submitted by E. R. Patterson, secretary of the Big Timber club.

According to affidavits of leaders of the club, the total catch for the year totals 2,923 magpies, 2,389 magpie eggs, 1,499 crows, 1,761 crow eggs, 129 owls, 14 owl eggs, 316 hawks, 67 hawk eggs, 622 coyotes, 32 bobcats, 8 lynx, 3 wolves, 812 weasels, 1,568 woodchucks and groundhogs, 15,294 gophers, 16 kingfishers, and 15 kingfisher eggs.

Transplanting Bass in Montana Lakes

SCIENTIFIC investigation sponsored by Montana's State Fish and Game Department, tending to seek ways and means by which all classes of fishermen may be benefitted in all parts of the state, have been spread over a diversified territory, but none of which so little is known as the conservation and transplanting of bass, sunfish, crappies, bullheads and other warm water fishes which prove a continual attraction for boys who will be the sportsmen of tomorrow. Work is constantly being carried on in the trout and grayling division. Research work is likewise being conducted from the great pond cultural station for warm water fish at Fort Keogh, near Miles City. But there's an outdoor laboratory in the western portion of the state which has passed the experimental stage and is now providing sport for hundreds in lakes and potholes where bass and sunfish were transplanted by the State Fish and Game Commission.

During the last summer 1,650 adult bass ranging from 1½ pounds to 3½ pounds were taken out of the Nine Pipe Reservoir—named for old John Nine Pipe, of the Flathead tribe—and transplanted in the chain of Clearwater lakes in the Blackfoot country.

About six years ago 20 cans of large mouth black bass fingerlings were rescued in the upper Flathead country and transplanted in Nine Pipe and Kicking Horse reservoirs in Lake county near Ronan, as an experiment. Two years ago fishermen angling for bullheads in Nine Pipe reservoir, apparently by accident, caught some of these bass on a small Colorado spinner.

Since that time, and every spring until the reservoir is closed by the commission, thousands of these fighting fish have been taken from the reservoir. At one time at the peak of the season in 1929, Deputy Game Warden Jack Goldsby counted 297 cars parked around the reservoir. In the spring of 1930 more than 1,500 bass were taken.

The Clearwater lakes, where the bass were lately transplanted and saved from destruction when shallow waters began to evaporate, have been stocked with trout of many varieties for some 15 or 20 years but because of the large number of squawfish and suckers in these lakes and the further fact that the water grows quite warm in the summer months, little success was attained with trout and it was decided to experiment with bass.

Last spring a crew of State Fish and Game Department men seined up the bass from the reservoir and they were brought to the rearing ponds in Missoula where they were kept in colder water until they hardened before putting them in the colder waters of the Blackfoot country. In this way, 1,650 adult bass were transplanted in these lakes.

Some of the pictures published herewith show the new oxygen tank truck used in transporting fish. The tank is filled with water and oxygen is supplied to the water from the oxygen tanks mounted just behind the cab of the truck. This outfit is the last word in transporting fish of all kinds. Last spring 60,000 salmon fry were taken in one load from the Daly hatchery five miles above Hamilton, to Browns lake, Powell county, 125 miles, without the loss of a single fish.

Another of the pictures shows two bass, both caught at one cast as both fish struck the wooden minnow plug at the same time and both were so firmly hooked that they were landed. The net weight of both fish was something over 10 pounds.

One of the pictures shows four farmer boys living in the vicinity of Nine Pipe reservoir with two strings of bullheads. At about the same time the bass were put in Nine Pipe reservoir, six years ago, the commission sent near Malta where a reservoir was being drained, and captured a few hundred bullheads and put them in this reservoir. They have done exceedingly well and there are thousands of them in the lake at this time. Some of them are of pretty good size and to the fellow who likes still fishing they afford much sport.

Hundreds of farmers and other fishermen gather around this lake in the spring and summer time and have no difficulty in catching fish. There are also thousands of sunfish in the lake and during the last two years the potholes in the vicinity of it have been stocked with perch.

Last year the commission secured from the Warm Water Cultural Station which the commission, in co-operation with the Bureau of Fisheries, is operating near Miles City, a number of real Mississippi catfish and these fish were liberated in the reservoir. It will not be long before anglers will be able to catch good-sized catfish.

She's My Baby

Mamma Bear intends that no harm shall befall Baby Bruin and rises on her haunches to get an eyefull of what's going on. Bill Rush, the photographer, tried in vain to sneak up on the family, but Mother Bear sniffed his presence.

HOME FOR ANTELOPE

With the fast disappearing prong-horned antelope apparently in need of a "little home in the West," the New York Zoological Society has appealed to the United States government by resolution for a million-acre antelope preserve—equivalent to 40 acres apiece in which these last members of once great herds can increase.

"The antelope has been reduced by thoughtless slaughter and increasingly unnatural conditions to a few thousand specimens, and will be the next large American animal to disappear outside of sanctuaries," declared Dr. W. Reid Blair, director of the Bronx Zoo. "At the present their numbers are estimated from 16,000 to 26,000, and I am inclined to think the lower figure is more nearly correct. Now is our last chance to establish a suitable home for this most characteristic of American mammals."

NO SUCH ANIMILE

The drunk halted in front of an enormous stuffed tarpon in a glass case. He stared at it for a minute or two in silence. Then he said:

"The fella who caught—hic—that fish is a—hic—liar!"

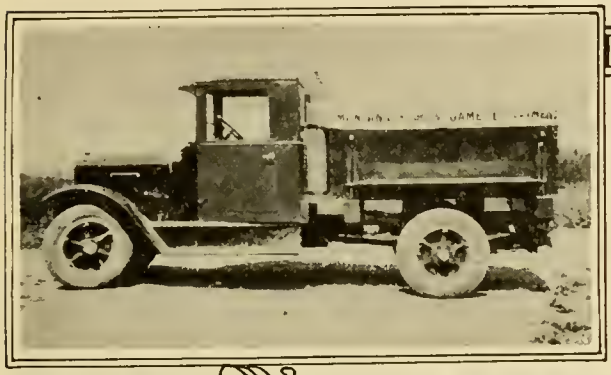
The Boss: I'm afraid you are not qualified for the position; you don't know anything about my business.

Applicant: Don't I, though? I'm engaged to your stenographer.

Young Wife: "Is the food nice, Herbert?"

Herbert: "Er—yes, my dear, the gravy is very tender."

Throwing a Life Line to Montana Bass



VIEW OF OXYGEN EQUIPPED TRUCK- OPERATED BY MONTANA'S FISH AND GAME DEPARTMENT — TANKS FOR OXYGEN ARE SHOWN AT REAR OF DRIVER'S CAB.

BIRDSEYE VIEW OF MODERN OXYGEN EQUIPPED TRUCK USED IN PLANTING FISH—

SEINING CREW AT NINE PIPES, AND BIG TANK TRUCK EQUIPPED TO TRANSPORT THE BIG FELLOWS TO OTHER WATERS.

FAMILIES OF ANGLERS TAKE THEIR LUNCH—

WHEN THE NET WAS PULLED IN 45 BASS RANGING FROM 1 TO 5½ POUNDS WERE TAKEN FOR TRANSPLANTING —

SHOWING A 6½ POUND BASS FROM NINE PIPES — SHOWING WONDERFUL GROWTH SINCE TRANSPLANTING

TWO BASS CAUGHT ON ONE PLUG AT A SINGLE CAST.

A CATCH OF BULL-HEADS FROM NINE PIPES RESERVOIR

A FINE CATCH OF BASS BY DEPUTY GOLDSBY AT NINE PIPES

Montana Fish and Game Commission

G. T. BOYD, Great Falls..*Commissioner*
JOS. L. KELLY, Anaconda..*Commissioner*
W. K. MOORE, Billings....*Commissioner*
E. A. WILSON, Livingston..*Commissioner*

THOMAS N. MARLOWE, Missoula, *Chairman*
ROBERT H. HILL, Helena, *State Fish and Game Warden, Secretary*

MONTANA WILD LIFE

The Official Publication of the State
Fish and Game Department.
Published Monthly at Helena, Montana.

FLOYD L. SMITH, Editor

Subscription Rate $1 per Year—15 Cents per Copy
Advertising Rates on Application

Copy for advertisements subject to approval of State Commission and must be in the hands of the editor at the State Capitol building, Helena, on the 15th of the month preceding publication date.

VOL. III **MARCH, 1931** **NO. 10**

WHAT I THINK OF FISHING

Herbert Hoover—I personally, perhaps, lend more importance to fishing than some people although I sympathize with all those who want to get anywhere away from the work shop and a desk. I am for fishing for fun as a contribution to constructive joy because it gives an excuse and an impulse to take to the woods and to the water. Moreover, fishing has democratic values because the same privilege of joy is open to the country boy as to the city lad.

Theodore Roosevelt—Dame Juliana Berners says: "Fysshinge is goode for the bodye as well as the soule," and I thoroughly agree with her. I know of nothing more delightful than fishing. Fishing is the most democratic of all sports.

Support all work against pollution of streams and restoration and protection of fish that we may have better fishing.

Knute Rockne—To a man engaged in sedentary, high-pressure work, involving much use of nervous energy but with little physical outlet, there is no finer sport and recreation than fishing.

One becomes wrapped up in the quiet and nerve resting sport of extracting the fish from his native waters, which sends him back home full of renewed vigor and energy.

James Oliver Curwood—The world loves the man who loves to fish. You don't find him in jail. You don't find him in the hospital. You don't find him dying young. He is the man, who, without flaunting his religion from the housetops, sees God forever in the blue skies, in the forests, in the glimmer of the stars and the rising of the moon—in everything that is a part of his beloved streams and lakes. Fishing is not only a pastime which man has created for himself. It is the greatest character-building activity under the sun for human hearts and souls. It is the man who loves to fish who helps to keep the world at its best, who is the greatest fighter for its beauties and its ideals, and all because he has come to realize and understand the glorious thrill of that intimate contact with nature which one finds when he has a rod in hand.

"What a great blessing is a friend with a heart so trusty that you may safely bury all your secrets in it, whose conscience you may fear less than your own, who can relieve your cares by his conversation, your doubts by his counsels, your sadness by his good humor, and whose very looks give you comfort."—Seneca.

CRISIS THREATENS GAME

THE drought of 1930 affected more than human beings and their domestic stock. Word from Arkansas, Tennessee, Mississippi,, and other neighboring states, are to the effect that the game crop last year was far below normal. To make matters worse archaic laws tied the hands of game officials who would otherwise have closed the hunting season to save the seed stock.

That in itself was bad enough. But to top it off the stricken people of that region during the past winter were compelled to kill off every edible bird, animal and fish within their reach to eke out an existence.

Even the lowly rabbit almost suffered annihilation in certain areas. Ordinarily this lively little fellow, "the bread of the forest" for the winged end four-footed enemies of our beneficial wild life, is not considered worthy of pursuit by white men in certain southern and western states. This time he filled an important role in saving human lives.

A final evaluation of the situation will not be possible until the breeding season is well advanced this coming spring, bnt it is a foregone conclusion that much of the conservation work of years has been all for naught. Now heroic measures only will bring back the denizens of forest, field and stream in the drought-ridden areas.

You better live your best and act your best and think your best today; for today is the sure preparation for tomorrow and all the other tomorrows that follow.—Harriet Martineau.

SPORTSMEN SPEND MILLIONS

MICHIGAN'S 400,000 small game and deer hunters spent about $12,000,000 while in the field during the hunting season, according to the department of conservation of that state. They have approximately $10,000,000 invested in guns and other more or less durable hunting equipment. This eqnipment has an annual depreciation volume of abont $1,000,000 and an interest charge of $500,000 if it is considered as invested capital. An additional $5,000,000 is spent each year for sundries, if the computation of the department of conservation is accurate.

Included in the $12,000,000 spent while in the field is a gasoline bill of $500,000, one hundred thousand of which is gas tax paid into state and county highway funds.

Michigan's army of hunters also pays the state a total of $600,000 in license fees. The ratio of license fees to the other costs of hunting is $1 to $18.50.

The license fees paid the state become a part of the Game Protection Fund which is administered by the conservation department for the protection and propagation of game.

The men whom I have seen succeed best in life have always been cheerful and hopeful men, who went about their business with a smile on their faces, and took the changes and chances of this mortal life like men, facing rough and smooth alike as it came.—Charles Kingsley.

THE VALUES OF WILD LIFE

THE common symbol of value is the dollar mark. The dollar value of wild life can readily be seen in food furnished, in attractions to tourists, and as a stimulant to certain forms of business or trade. There are other values that the dollar mark cannot express. Among such values are the pleasure and recreation afforded mankind and the better citizens made by an intimate contact with nature.

MONTANA WILD LIFE

(From the Helena Independent)

MANY attempts have been made by individuals, many of them well equipped for the job and some of them with adequate financial resources to publish a western magazine in Montana which would every month reflect the attractive things about the natural scenery, the highways and wild life in that part of the Rockies known as the "Land of Shining Mountains," but one by one these magazines have dropped out of sight.

The same thing has happened in other states. The one magazine which has made a conspicuous success is "Sunset," originally the property of the railroads. It won a place for itself as a travel magazine, then added its fiction department and gets away with something like 150,000 copies monthly published in San Francisco. But the Intermonntain country has never succeeded in supporting a magazine which would graphically reflect life in this "last, best west." The editors seem to run out of material and the publishers out of money.

These remarks are occasioned by the appearance of the January number of MONTANA WILD LIFE, published by the Montana State Fish and Game Department. It is number eight of its third year, which shows the magazine is not a youngster as such publications go. Every number of this magazine which has come to the attention of The Independent has been an excellent piece of work, with attractive illustrations made from photographs of actual life in the mountains. No magazine of the west has been better illustrated. From a literary standpoint, under the editorship of Floyd L. Smith, it is fully up to any publication ever issued in the west, and while devoted to fish and game propagation and preservation, it touches on many other subjects such as forest and stream, mountain resorts, biological subjects and discussions. It encourages everything having to do with outdoors from prevention of forest fires to the guarding of streams against pollution. Unconsciously it is a health magazine; it encourages dude ranching, camping, mountain climbing, boating, amateur photography of landscape and game; it is a tonic for the tired business man; gives the women ideas as to the enjoyment of fishing and hunting and every youngster who sees it will want to be a Daniel Boone, a Kit Carson or a Jim Bridger.

The magazine says its subscription price is $1 per year. It should be worth $3 to anyone who lives in Montana or contemplates visiting this recreation ground. Montana should be proud of this publication—it is one of the best advertising mediums we have ever seen. It should go to the home of every person taking out a fishing or hunting license. It should be an influence for preventing violation of the game laws as it encourages a proper attitude toward our wild life and the value of our forests, fields and streams.

The state fish and game commissioners, and the game warden, Bob Hill, may be justly proud of MONTANA WILD LIFE.

Elimination of pollution in a stream does not necessarily bring back aquatic life. Remember—"Our Creator has never repainted a masterpiece once marred by mortals."

EDUCATION AND CONSERVATION

EDUCATION rather than force is the key to successful solution of the conservation question in the opinion of Seth E. Gordon, recently elected president of the American Game Protective Association. Every person interested in these things should pay particular heed to these words of Mr. Gordon, the nation's outstanding figure in practical conservation:

"The success of conservation lies wholly in a more extensive educational program which will mould public sentiment and which will arouse the people of the country to the need of such work. . . . The restoration of America's wild life resources is one of the most important problems confronting the American people today. We are essentially a pioneer, outdoor people. Much of our outstanding progress as a nation is due to the character and virility we have developed through close association with nature. We must continue the opportunities to develop these essential qualities."

LET YOUR BOY OUTDOORS

IT is said that a good sermon needs no application. The following excerpt from an article by Harry Emerson Fosdick, appearing in a recent issue of The American Magazine, would seem to fall in that category:

> "Some of us look back upon a glorious youth. I, for one, can bear witness that not one boy of my old gang went permanently wrong. Our play was right—we roamed the woods, fished the streams, built our shanties by the brookside, and played our games. Today I walk the streets of New York to watch the boys and girls. It is estimated that out of every 100 boys on Manhattan Island, 80 spend their leisure time on the streets and that of all the things that they can do there, 50 per cent are inimical to character, 20 per cent are downright illegal. Of course, we have a crime wave, largely made up of juveniles. We are making criminals in our great cities faster than we can put them in jail."

Wholesome recreation is a large factor in character building. The great outdoors affords many of the best opportunities for such recreation. The conservation of the native wild life of Montana will go far towards providing for the youth of this and of coming generations wholesome recreation that is needed, and to place it within access of rich and poor alike. Such a work should enlist the interest of the entire citizenship.

Fish hatcheries do not mean more fish and planting of upland game birds does not mean better hunting unless we have clean streams and wooded covers.

SPORTSMANSHIP

HUNTING and fishing rank as the greatest of out-door sports. The taking of game and fish has ceased to be a mere food-getting activity. In most sports, poor sportsmanship is punished in many ways. The boxer who hits below the belt loses the decision; the ball player who fraudulently throws a game is barred from organized baseball; the golfer who does not comply with all the rules is disqualified. But in the greatest of out-door sports, hunting and fishing, unsportsmanlike acts do not meet with such unanimous disapproval. Many who would never think of cheating at a game of cards, or in a game of golf, do not hesitate to take unfair advantage of their fellow hunter or fisherman in taking game out of season, or in an unlawful manner or quantity, and even boast of their unsportsmanlike deeds. Poor sportsmanship is poor sportsmanship whether displayed in golf, baseball, football, or in hunting or fishing.

Miniature golf is solving the unemployment problem. It takes half of the unemployed to build them and the other half to play on them.

The trout, "that spangled aristocrat of the hurrying stream."—Dr. George Parker Holden.

RINGNECKS MEAN "GREENBACKS"

THE goose that laid the golden egg had nothing on the South Dakota ringneck pheasant. Nor had the Pied Piper of fabled depopulating powers, nor even Midas of the goldmint fingers, in the estimation of two chambers of commerce of the Coyote state. For the ringneck's death only multiplies golden nest-eggs in South Dakota pockets, the ringneck's piping only swells the South Dakota population, and the ringneck's nimble touch upon any countryside decorates the scene with loose currency, according to the impression given by letters circulated by the chambers of commerce of Redfield and Huron. Its native game depleted, South Dakota some years ago imported Chinese pheasants and transplanted them with many misgivings near Redfield. Under careful supervision the birds increased so enormously that now the state permits long open seasons and liberal bag limits to sportsmen, and many towns vie for glory, trade, tourists and residents on the strength of pheasant hunting. The "pleasant city" of Redfield became famous as "pheasant city," and Huron boosters laud that city's location "in the heart of hunters' paradise."

History of the Montana Grayling

By Professor Morton J. Elrod of Missoula, Montana State University

M. J. Elrod

EXQUISITELY colored, graceful in action, shapely in form, gamey to the last, the Montana grayling is the delight of sportsmen. It is the "ultima thule" of fresh water fishes, living only in clear, cold and rushing water, feeding mainly on insects and their larvae. It is even better than trout as food, and is in every way desirable. For food or for fly fishing sport it is sought eagerly by fishermen. Its propagation and distribution by states in the Rocky Mountain region and by the Bureau of Fisheries of the federal government has been fostered assiduously in recent years. All eggs that can possibly be secured are carefully nurtured and rather widely distributed.

So selective is the grayling in its habitat that it frequently does not thrive well when planted in a new environment. It prefers clear, cool, swift streams with gravelly beds. Rock strewn and bouldery streams are not to its liking, although it will enter them in search of food. It is said that it will travel long distances in search of food. But it has now been established in many sections of the Northern Rockies, and its success in other places seems assured if its demands for food and spawning places are met.

The name Thymallus goes back to 1829, established by the famous French zoologist Cuvier. It comes from the Greek word, referring to the odor of thyme which is supposed to be evident when the fish is first taken from the water. This may or may not be apparent. Izaak Walton says of it, "some think he feeds on water thyme for he smells of it when first taken from the water." There seems to be disagreement about the odor. Henshall says of the grayling that "however it may have been in days of old, it is not so now, though an odor of cucumbers is sometimes perceptible when it is first out of the water." It may be possible that the European grayling, which Cuvier knew, has a slightly different odor from the American species. Since thyme is not native to the Rocky Mountains it can in no way affect the odor of the fish of the region.

The graylings belong to the family Thymallidae, proposed by Gill in 1894. They agree closely in external structure and habits with the family Salmonidae, which includes various species of trout and salmon. There are structural differences which the ordinary person would not observe. The dorsal fin is high, rather long, composed of 19 to 24 rays, the anterior half of simple rays, the posterior half of bifurcate or little branched rays, colored with orange, red or purplish spots. Behind the dorsal fin is a small adipose fin, present also in the Salmonidae. The air bladder is very large. In the lateral line are about 90 small scales. The caudal fin is forked. The small anal fin has 12 to 15 rays.

The distribution of the graylings is interesting. They are confined to the cold water, clear rivers and streams of cold or Arctic regions. They are the most specialized of fresh water fishes, very select in their food, and adapted to only cold water. About five existing species are reported, three of which are in North America.

The European species, Thymallus thymallus, is found in Siberia, Russia, Germany, France, Switzerland, and England.

The Arctic grayling, Thymallus signifer, is found from the Mackenzie river westward through Alaska, north to the Arctic ocean. The Michigan grayling, Thymallus ontariensis, was formerly found in certain streams of Michigan. The Montana grayling, Thymallus Montana, originally inhabited the streams flowing into the Missouri river above Great Falls, and is now being extensively propagated and widely distributed.

The Arctic grayling is called bluefish and Back's grayling in Chamber's "The Unexploited West," the latter name in honor of Lieutenant, afterward Captain Sir George Black, who accompanied Sir John Franklin on his exploring expeditions. Captain Beach descended the Great Fish river to its mouth in 1834. The river name was changed to Bach river, in recognition of this exploration. In July, 1834, Captain Bach mentions having observed grayling rising to flies at the outlet of Pelly lake on Bach's river.

The following quotations from "The Unexplored West," (295, 296) will be of interest:

"Before the Senate committee of 1888, Dr. G. M. Dawson stated that in all the waters tributary to the Mackenzie, the Arctic grayling, or Back's grayling, which is an excellent fish, was to be found. It is a fish resembling the trout in appearance and size, but has a very large back fin. It is a very game fish, much like the trout, takes the fly, and is excellent eating. . . . It is a purely fresh water fish, and a two-pounder would be a fair-sized one."

E. A. Preble is quoted in the same publication as follows: "The Arctic grayling, usually called bluefish in the north, has a very extensive range. It occurs throughout the region from Peace river and Athabasca lake northward and northwestward to the Arctic ocean. . . . As it prefers clear streams it is somewhat local in distribution, occurring but seldom in the main rivers, which are usually muddy, but being abundant in many of the clear tributaries and the lakes which they drain. . . . It was common in Great Bear lake near Fort Franklin, where many were being taken in whitefish nets.

"I am not aware that the grayling has been recorded from any stream tributary to Hudson Bay, except in one instance. Dr. Bell mentions that it was taken in tributaries of the lower Churchill and that a specimen was identified by Professor Gill as Thymallus signifer. A possible explanation of the occurrence of this fish in the Churchill is suggested by the fact that there is a direct water communication between Churchill river and Athabasca lake. The grayling occurs in Black or Stone river, which flows from Wollaston lake into Athabasca lake. The waters of another outlet of Wollaston lake, Cochrane river, flow by way of Reindeer lake into the

Grayling Feeding Problem Unsolved

PERFECTION of food and feeding system for the Montana grayling, classified by Izaak Walton as "the flower of fishes," is a problem that is commanding the attention of fish culturists throughout the nation. Alvin Seale, superintendent of the great Steinhart Aquarium at San Francisco, has taken a keen interest in the problem. The Steinhart Aquarium was founded in 1917 by Ignatz Steinhart and is under the management of the California Academy of Sciences, Golden Gate Park.

In a letter to Kenneth F. MacDonald, superintendent of Montana fisheries, Mr. Seale writes: "As you are aware, I have been working on the plan to find some food that the baby grayling would take as soon as the food sac is absorbed. This work has covered some four years. In the first season's trial I used hard boiled egg pressed through a cloth, and also beef heart and liver in equal parts ground fine. None of these proved of any great value as the young fish died of starvation within a few months.

"The next year I tried the preparing of live food for the baby fish and had several tanks of infusoria grown and ready for them when they were free swimming, but this did not prove any more satisfactory. Although a number of other foods were tried on these young fish none of them were successful. I believe that the problem is absolutely unsolved insofar as our experiments have gone."

Churchill, thus affording to a torrent-loving species like the Arctic grayling a ready means of communication."

Professor John Maconn is quoted as saying before the Senate committee in 1888 that "he had caught Back's grayling in the tributaries of Peace river, in the Rocky Mountains. It is both an Arctic and a mountain fish, and delights in clear water. It is very gamesome, and takes all kinds of bait. When it took the bait it would jump clear out of the water, many times a couple of feet or so, and of course, the beautiful colors (more beautiful than those of the mackerel even), glistening in the sun, made the anglers thrill with excitement. They are a white-fleshed fish, and not anything like as hard as the trout."

It seems, therefore, from reading the reports, that the Arctic grayling, Back's grayling, or Bluefish, is very abundant in many streams of the north draining into the Arctic ocean, and that it will continue in abundance for a long time, owing to the scarcity of population, inaccessibility by sportsmen and fishermen, and lack of transportation facilities.

The Michigan grayling, Thymallus ontariensis, was originally described by Cuvier and Valenciennes. The specimen was received from Milbert's New York collection, recorded as coming from Lake Ontario. The authors report it as very near to that of the lake of Geneva. The specimens were said to be a foot long. Jordan and Evermann sum up the evidence as follows: "It is wholly uncertain where Valenciennes got the specimen which he called Thymallus ontariensis. It is probably the ordinary grayling, Thymallus thymallus, of Europe, erroneously attributed to Milbert's New York collection. In any case, its identity with the Michigan grayling is more than doubtful, as the rivers in which the latter occurs were then unexplored."

The Michigan grayling was described by Cope in 1865 as Thymallus tricolor, which name Jordan and Evermann retain. However, Thymallus ontariensis is used by the Bureau of Fisheries in their recent publication. This name will doubtless be used hereafter in scientific literature wherein references to the Michigan grayling are made.

The Michigan grayling has a dorsal fin of moderate height, with 19 to 21 rays; the Arctic grayling has a very high dorsal fin 22 to 24 rays; the Michigan grayling, found formerly in the streams of northern Michigan, formerly abundant in Au Sable river, Jordan river, and other streams in the southern peninsula, are considered to represent only a detached colony of Thymallus signifer, left from the former or post-Glacial extension of the range of that species, of which it was once a variety. While is still remains in Otter river and possibly in other streams in northern Michigan, it has entirely disappeared from the waters of the southern peninsula. Leech says "the opinion is expressed by observers that the introduction of the non-indigenous brook trout and rainbow trout has been a factor of importance in their disappearance." The Michigan grayling averages probably not more than one-half pound, and rarely exceeds one and one-half pounds in weight."

Grayling were first artificially propagated in Michigan in 1874. Recently Michigan fish authorities have undertaken with energy their propagation.

The Montana grayling was first described by Milner (Rept. U. S. Fish Comm. 11, 1872-73, printed 1874) from specimens taken from a tributary of the Missouri river at Camp Baker. While it has been known for more than 50 years, and anglers have traveled long distances to take the handsome specimens from the cold water of their native streams, its propagation and distribution to other streams has been undertaken during the past 20 years. Perhaps 10 years will include the time during which eggs in numbers sufficient to propagate and establish the species in other places than their native habitat.

The species is said by Jordan and Evermann to be an isolated colony of the Arctic grayling. It originally existed only in the tributaries of the Missouri river above Great Falls, principally in Smith or Deep river and its tributaries, and the three forks of the Missouri, the Madison, Gallatin, and Jefferson rivers, and their tributaries. It has also been reported from Sun river at Fort Shaw by Dr. J. C. Merrill.

The fololwing general description of the Montana grayling will be of value, as given by Leach, condensed:

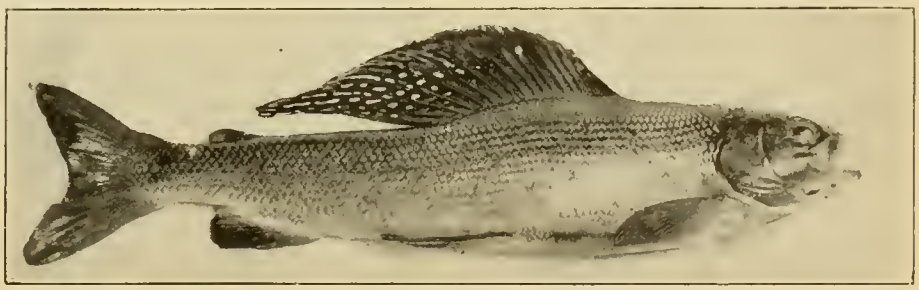
"Body elongated, compressed, the depth contained four and one-half times in the length; head subconic, of moderate size, its length one-fifth that of the body; dorsal outline a uniform gentle curve, highest at the beginning of the dorsal fin; mouth oblique, terminal, of moderate size; teeth rather feeble, of uniform size, on jaws, palatines, and vomer; gill rakers short and stiff, 17 in number; eye large, exceeding the length of the snout, contained three and one-half times in length of head; scales, 82 to 85 along lateral line, eight rows above and 10 rows below the line; dorsal fin long and high, 18 to 21 rays, length and height both equalling depth of body; tail strongly forked; color, gray back with purplish reflections, sides of head and body lighter, with purplish and silvery irridescence; bell pure white; anterior part of body with a few V-shaped black spots; dark heavy line, more distinct in males, along upper border of belly from ventral to pectoral fins; dorsal fin richly variegated with rosy border, four to six rows of roundish rosy spots in whitish areas, dark lines forming blotches between the spots; ventral fins with three rose-colored branching stripes along the rays; anal and pectoral fins plain, with dark border."

The colors of the Montana grayling are gorgeous, the flesh is firm and flaky, very white, and of delicate flavor (Smith and Kendall); and the fish is active and gamey, even excelling the native trout. It rises eagerly to the artificial fly, and if it misses will rise again and again. It will take various baits, as caddis-fly larvae, grasshoppers, and worms. It stays in the bottom of pools in plain sight, and often in large numbers. It is reported to be an excellent fish for the aquarium and, of course, its beauty will attract attention. The artificial flies recommended are professor, Lord Baltimore, queen of the water, grizzly king, Henshall, coachman, various gauze-winged flies, using No. 10 and No. 12 hooks. Fish from Georgetown lake average from one and one-half to two pounds, from the South Fork of Madison river, two pounds, often weighing as much as three pounds.

The grayling does not seem to be easy to cultivate. In Montana the percentage of fry produced from grayling eggs seldom exceeds 75. The yolk sac of the eggs is small, and is absorbed within a week. The young fish are then about a half inch long. They move about in search of food, but are less active than trout or salmon fry. Leach says: "It is customary to distribute the fry within two or three days after incubation is completed, since attempts made to rear them have not given good results. The fry do not take readily to artificial feeding, and when moved from hatching troughs to rearing ponds they usually refuse food entirely for several days. However, the outcome of experiments along this line gives ground for the belief that with proper facilities this difficulty in rearing may be overcome."

The eggs are about one-eighth inch in diameter, pale yellow when first taken, semi-buoyant. The average egg production is about 3,000 per pound weight of parent fish. The eye spot, small gilt specks with a tiny black spot, appear in from 7 to 10 days. The eggs hatch in from 20 to 21 days, in water temperature of about 50 degrees F.

Eyed grayling eggs may be transported when properly packed. Both



The Montana Grayling

eyed eggs of grayling and other species have been planted in the hitherto almost inaccessible lakes of Glacier National Park by transportation on a ranger's back. He is free to use his hands, and can traverse dense brush and thickets, wade streams, and place the eggs safely in barren water.

Minute water animals live in all lakes in this region. Hence the little fish, when hatched from eggs, are able to find food, and have no enemies, or few enemies, in the water. When thus planted in a lake whose outlet has a high waterfall in its course, other species of fish are unable to ascend. Thus the planted fish will be able to live and thrive, unless the number of fish is too great for the size of the lake, and food becomes scarce. Fishermen and tourists reaching high mountain lakes in Glacier National Park may take grayling from perhaps a dozen small mountain lakes, and from many of the streams. Practically every lake of any size where tourists go is now stocked with one or more species of trout.

The propagation of Montana grayling in Montana began in 1908, but was carried on by the United States Bureau of Fisheries for many years previous. At the present time, Georgetown lake supplies the largest number of eggs. Millions are taken each year. The fact that this is a made lake, and that the fish therein have been planted by man, tells the story of what can be done in propagating this handsome and desirable species.

The native waters of the fish are east of the Rocky Mountains; Georgetown lake is in the Pacific ocean drainage, lying at an elevation of almost a mile above sea level, with clear, cold water for the lake supply. Not only does this fish furnish the large number of eggs used by the state hatcheries, but large exchanges are made with the Bureau of Fisheries. In 1927 the United States Bureau of Fisheries received from this source 3,221,050 grayling eggs for the Bozeman hatchery for co-operative planting in waters in which both the bureau and the state were interested. In 1929 the state commission furnished the Bozeman hatchery 1,335,000 grayling eggs for development in its Meadow Creek auxiliary, and more than a million eggs for the Glacier Park substation.

The Montana grayling is artificially propagated by the United States Bureau of Fisheries and by the Montana State Fish and Game Commission. It is practically confined to the Montana State Game and Fish Commission, and nearly all of the eggs reared at the present time are taken in Montana by the state commission. For this excellent work in cultivating and developing a most beautiful and desirable food and game fish the Montana State Fish and Game Commission deserve much praise. The Bureau of Fisheries, in the bulletin, "Artificial Propagation of Whitefish, Grayling, and Lake Trout," give and recommend the methods pursued and recommended by the Montana State Fish and Game Commission.

Grayling has been introduced into many lakes and streams in the state through the work of the Montana State Fish and Game Commission, and the distribution is being extended and enlarged yearly. It has been introduced in Colorado on both sides of the Continental divide by the United States Bureau of Fisheries, the Colorado State Fish Commission, and by local clubs. One hundred thousand fingerlings were liberated in 1901, and the work has been more or less continuous since.

The work of introducing grayling into other Rocky Mountain states is begun. It has been planted in the headwaters of the Salmon river in Idaho, and in Utah. Although it is difficult to establish in a new home, when once it becomes adapted it thrives and multiplies.

In its native home the grayling is still abundant. It is the principal fish in the South Fork of the Madison, and occurs in the backwater of the Madison at the dam. It occurs in Grayling creek, Fan creek, and the Firehole river as far as the Firehole falls. It is in Redrock river, Beaverhead river, and the Gibbon to its junction with the Firehole.

It is being propagated and distributed in the waters of Yellowstone National Park by the United States Bureau of Fisheries, co-operating with the Montana State Fish and Game Commission. Success in establishing it in so many places has stimulated the work of propagation. It is attractive in color, gamey to the last, is clean in habits, lives in the swift streams in the rugged places of the great outdoors, is excellent for food, and is in every way desirable.

1. Evermann, Barton W., A Reconnoissance of the Streams and Lakes of Western Montana and Northwestern Wyoming. Bul. U. S. Fish Com., Vol I, for 1891, pp. 3 to 60.
2. Gill, Theodore, Thymallidae, Proc. U. S. Nat. Mus., 1894.
3. Jordan, David S., and Evermann, Barton W., Fishes of North and Middle America. 3 Vols. Bul. U. S. Nat. Mus. No. 47, 1896.
4. Jordan, David Starr, A Reconnoissance of the Streams and Lakes of the Yellowstone National Park, Wyoming, in the Interest of the United States Fish Commission. Bul. U. S. Fish Com., Vol. I , for 1899, pp. 41-63.
5. Henshall, James A., A List of the Fishes of Montana. Bul Univ. Mont. No. 34, Biol. Series No. 11, 1906.
6. Ellis, Max M., Fishes of Colorado. Univ. Colo. Studies, Vol. I, No. 1. 1914.
7. Chambers, Maj. Ernest J., The Unexploited West. Ottawa, 1914.
8. Smith, Hugh H., and Kendall, Wm. C., Fishes of the Yellowstone National Park. Bur. Fish. Doc. No. 904. 1921.
9. Leach, Glen C., Artificial Propagation of Whitefish, Grayling, and Lake Trout. Bur. Fish. Doc. No. 949, 1922.
10. Lock, S. B., Whitefish, Grayling, Trout and Salmon of the Intermountain Region. United States Bureau of Fisheries Document No. 1062. 1929.
11. Jordan, David Starr, Evermann, Barton Warren, and Clark, Howard Walton, Check List of the Fishes and Fishlike Vertebrates of North and Middle America North of the Northern Boundary of Venezuela and Colombia. Rep. U. S. Fish Com., 1928, Pt. 2, 1930.

Can't Yuh Smell 'Em Sizzlin' In the Pan?

HERE'S a trio of speckled beauties of the Loch Leven variety taken from a Montana stream where they were planted as fingerlings by the Montana State Fish and Game Department. Much of the money supplied by sportsmen in the purchase of licenses is devoted to the maintenance and operation of the 14 state hatcheries and the five spawning stations which make possible the eventual hooking of these piscatorial beauties.

Fish and Game Asset to Montana

By I. H. Larom, Valley, Wyo., President Dude Ranchers' Association

I. H. Larom

IT is a recognized fact throughout the northwest that the Dude Ranchers' Association is probably the one organization which co-operates 100 per cent with all federal organizations such as the forest service, national park service, and Biological Survey, in the preservation and the propagation of game and fish. The same co-operation is given to fish and game departments of Montana and Wyoming, with increasingly satisfactory results, and the Dude Ranchers' Association believes in the sensible and porper administration of all game and fish matters with the promulgation of proper laws, game preservation and open hunting according to the peculiarities of conditions in each district.

Through our system of having 12 regional directors we are able to learn and to discuss, if no more, the conditions existing in each of these widespread districts, and as a result we are able to make recommendation to our state game departments as to what might be the best method of handling these situations.

As the Association is also interested in the administration of grazing and timber resources, we try to work out a sensible way of handling problems in districts where game propagation and grazing may be in conflict, and in many instances have been quite successful in settling these questions to mutual satisfaction. We believe that a spirit of give and take should be used in localities where such conflict exists and take the recognition of the rights and merits of both game protection and livestock interests.

The membership of this Association is largely made up of men who not only have livestock—horses, cattle or sheep—but also who are engaged in either the hunting business or the photography of wild game and have a natural interest in such. Every right-minded Dude Rancher operating today realizes that the game and fish of the West are one of our assets. It is the opinion of many of us that the very fact that even though it may be closed season—or closed territory—game around our regions and fish in our streams is a more important asset to us in the long run than the fact that these animals may be hunted or the fish caught. People coming from other parts of the country to these Dude ranches expect to see wild game and to find trout in the streams. As the bulk of the guests are in the west during the summer season, they know before-hand that they can not kill game, nor do they expect to. The pleasure they derive from seeing wild game far exceeds, in my opinion, their desire to kill.

According to my information, more than 7,000 dudes visited Montana and Wyoming last year. Out of this number, I will venture to say, there were not a total of 200 non-resident hunters.

A very important branch of the Dude Ranch business is the operation of summer pack outfits. These pack outfits travel in all directions and through rough mountain country. I would say that the object of these people is to see game and to obtain good fishing with the fact that they are in beautiful surroundings and away from civilization. Should the game of our districts disappear or become scarce a large part of the attraction for these pack trips would be eliminated.

It is, therefore, obvious that the Dude Rancher of today must realize the importance of, and be interested in, the handling of game and fish resources. Whether he be a hunter or not, it is generally conceded that in Montana and Wyoming the Dude Rancher is the friend and ally of the game warden. Of course, exceptions are bound to occur, but I think they are becoming less and less. Such exceptions are usually individuals who have but recently gone into the Dude ranch business on a small scale and think that in order to build up business they must produce the goods for patrons without respect for the game laws.

He soon finds his error. Many of the men who come west to hunt are members of great conservation societies of the east. There is no doubt but what these conservation societies over the United States are becoming stronger every year and that they exercise a powerful hold upon public sentiment.

It has been my good fortune to have been a member of the American Game Protective Association, the Izaak Walton League, and the Camp Fire Group of America, for many years. The committees of these organizations are composed of able men, willing to give their time and energy towards proper legislation for the continuance of our wild life. Such non-political departments for the conservation of our game and fish as those of the states of New York and Pennsylvania, which I takes as models, are the result of the endeavor of these men. It is my fond hope that some day those of us who are interested in game matters will be able to have the fish and game departments of our western states organized along lines of these two.

In Wyoming we have made progress in the efficiency of our game laws by the appointment of a non-political commission. This commission is being rapidly given more and more power to open and close seasons during the hunting season.

The revenues of our game department come direct from the receipts of that department, although in order to get started it has been necessary for the department to borrow from the state an amount approximate to what revenues will be over the biennial period.

The next great object to my mind is the taking of State Game Departments out of politics, the employment of men qualified to handle jobs from every standpoint regardless of whether they are residents of the state or not, and the elimination of political responsibility to whatever party may be in power.

Shade

The kindest thing God ever made
His hand of very healing laid
Upon a fevered world is shade.
Green temples closed against the heat
Of noon time's burning glare and beat
Open to any Pilgrim's feet.
This is God's hospitality,
And who so rests beneath a tree
Has cause to thank Him gratefully.

PIPE DOWN

She: "You remind me of the wild sea waves."

He: "Oh, because I am so reckless and unconquered?"

She: "No. Because you are all wet and you make me sick."

Vigilantes of Montana

A CHRONICLE OF
THE OLD WEST

How They Disposed of
BAD MEN
In the Sixties!

A full account of the capture and execution of

HENRY PLUMMER'S ROAD AGENTS

By PROF. THOS. J. DIMSDALE
(Illustrated)

286 pages of frontier adventure, with historical reference to Virginia City and other western communities.

PRICE $1.00 POSTPAID

For Sale by F. J. FALBAUM, JR. Cameron Montana

The Why of Game Laws

By Glen A. Smith, Missoula, Chairman Montana Sportsmen's Association

Glen A. Smith

GAME laws are not designed to deprive people of their right to hunt and fish. They are merely common-sense rules which long experience has taught are necessary to maintain the wild life supply, so that hunting and fishing may continue to be worth while. Any stockman would at once realize the folly of butchering cows with new-born calves, of disposing of all his cows, or all his bulls, or of reducing his herd for immediate gain to the point where it was unprofitable to operate the business. He does not need laws to prevent him from doing these things—he refrains from doing them through self-interest.

If the wild life resource is worth anything to the public—and it is assumed to be worth several millions of dollars—it is worth managing properly. Every citizen of the state is part owner of this resource, and as such must share the responsibility for proper management.

The game laws are a guide to the citizen in this respect and if he ignores them the assumption is that his interest lies solely in grabbing everything possible at the moment, regardless of what effect it may have upon the future. It is from this assumption that has arisen the term "Game Hog."

The following clipping taken from the Western News, published at Libby, Mont, illustrates that there are "game hogs" and what's more appalling is that public sentiment is against such dastardly deeds is lacking when a public official sworn to enforce the laws of the land will pass out such light sentences as these and then have the nerve to suspend them:

"Three Men Arrested for Illegal Killing of Game

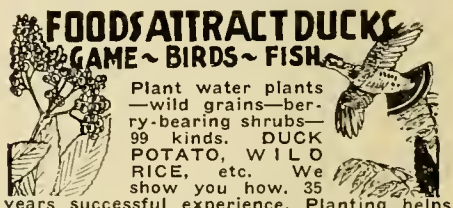
"Game Warden Dorrington, accompanied by Ranger C. E. Powell, arrested Jim Roberts, Jack Young and Sid Workman of the Pinkham Creek district the first of the week, charged with illegal killing of game. They were taken before Justice of the Peace McGovern at Eureka, and Roberts and Young were given a 60-day suspended sentence, while Workman was fined $25, which he is serving out in the county jail.

"The officers found a large quantity of deer meat on the Robertt place. A number of deer had been quartered and piled one on the other, in a building. These had frozen and later thawed and much of it had begun to spoil. From 30 to 40 deer hides were also found on the place, but not all of them killed recently."

From this neck of the woods comes the cry that the deer will be extinct in a short time if the outsider, induced by improved highways, is permitted to come in and partake of the wholesome sport that the region offers and it is from this region loud wails are heard about providing the Fish and Game Commission more money to protect our wild life. I for one would like to see the Game Commission's hands strengthened by more money and active moral support so that such conditions as these will be banished from our fair state.

LICENSES FOR GIRLS

All feminine anglers over 14 years of age will be required to purchase licenses to fish in New Jersey, if a bill presented to the legislature by the New Jersey Fish and Game Commission becomes law. The proposed law is said to be another reflection of a growing interest of modern "Dianas" in outdoor sports. Reports from many states have disclosed a constant increase in the number of women nimrods, and last year Pennsylvania alone licensed more than 3,000 feminine hunters.



Plant water plants—wild grains—berry-bearing shrubs—99 kinds. DUCK POTATO, WILD RICE, etc. We show you how. 35 years successful experience. Planting helps—folder free. Ask about our personal investigation and planting service.
TERRELL'S NURSERIES
1075 W. Blk. OSHKOSH, WIS.

for Spring Bear Hunting
BLACK, BROWN AND GRIZZLY
GOOD HORSES AND HONEST MEN
Write for particulars
IRA C. TESTER
LIBBY, MONTANA

You Will Always Cherish a Pride In Well-Mounted Trophies

FINS
FURS
FEATHERS
Lentfer Bros.
TAXIDERMISTS
Successors to Jonas Bros.
215 W. Park St.
Livingston, Mont.
Phone 337-W

SPORTSMEN---
Recognize this as Headquarters for All Hunting, Fishing and Camping Equipment
THE MONTANA HARDWARE
Department of Anaconda Copper Mining Company, Butte, Montana

The Duck Hunter's Return

"WELL, here I am back. When do we eat? I've got an appetite like a horse and I'm hungry as a bear with two stomachs. Certainly tones a man up to get out into the open. Rough it for two days, fill the old lungs full of pure ozone and take 10 years off your age. I feel like a 16-year-old kid.

"Dinner's ready? Well that's good. What yo' got? Steak? Well, that's better than nothing. Rather have pork chops, though. Get me some clean cloths and I'll hop into the tub. Be with you in five minutes.

"Ducks? Sure we shot ducks. I know I knocked one down, but he fell in a swamp and we couldn't find him. Bill and I looked for it until dark and then we couldn't find our way back to camp. Stayed there on the lake shore all night in our wet clothes. I was going to start a fire, but my matches were damp. Got kind of cold before morning, but it's all in a lifetime. Does a man good to eat out and rough it that way. Well, get me those dry clothes. Don't keep me waiting. I'm hungry.

(Curtain lowered for a moment to denote the elapse of one hour.)

"That bath water was stone cold, almost. How do you expect a fellow to take a bath and shave with no hot water? I'm chilled through from it. Close that window. This house feels like a barn. Haven't you any regard for a man's health?

"Gosh, I'm hungry. All we had out there was burnt bacon and black coffee. Tasted pretty good, at that. Does a man good—

"What's the matter with this steak? You know I like my steak rare. This is cooked to death. Well, I can't help it if it has been cooked an hour. You could have had some hot water ready for my bath.

"Bet I'll have a cold in the morning, the way this house is. And this meat is enough to ruin a man's digestion. Hand me that fly swatter. I can't eat with the house full of insects. Darn that fly. My aim was all right, but he moved too quick. Bad as those ducks.

"Going again? Sure we're going again. We know where the ducks are now and we'll get 'em next time. We're leaving at 4 o'clock next Sunday morning—that is, if I don't get pneumonia or something from the way this house is."
—American Field.

BATHS FOR FISHES

Baths for little fishes have come into vogue in state fish hatcheries, as the result of a discovery by the Maine Department of Inland Fisheries and Game. For years the worst cause of loss at the hatcheries, where many millions of fish are raised annually to restock state waters, has been a fungus growth which killed the young fish. Through its experiments the Maine department has found that this growth can be destroyed if the fish are given acetic acid baths, Commissioner George J. Stobie has informed the American Game Association. So now each hatchery's troublesome family of millions of fish youngsters have to wash their "necks and ears" regularly, with acetic acid for soap.

MY WORD

An Englishman was visiting this country for the first time, and as he was driving along the highway saw a sign: "Drive slow. This means YOU."

The Englishman stopped in surprise and exclaimed: "My word, how did they know I was here?"

SUBSCRIPTION COMBINATION

American Game Protective Association,
2273 Woolworth Building,
New York City, N. Y.

Herewith find remittance of $2.00 for membership in the Association including subscription to "AMERICAN GAME" and "MONTANA WILD LIFE."

Combination Price

Membership in American Game Protective Assn.
Subscription to "American Game"
MONTANA WILD LIFE
} $2.00

If you are already a subscriber to "MONTANA WILD LIFE" and wish to renew for one year from the expiration of your subscription please mention that fact.

Add 50 cents for Canadian postage; $1.00 for foreign postage.

Name .....

Address .....

Date.....

Better DUCK Shooting

Order Wild Rice Seed For Spring Planting Now.

Thousands of ducks will come to an established rice field. We also have wild celery, Sago Pond plant, Wapato duck potato and other attractions for waterfowl and fur bearers. Also parched wild rice for table use.

GEO. D. HAMILTON'S AQUATIC FARMS
Box 16 Detroit, Minnesota

The Old Unrest

Why do we still remain restless
When we no longer pursue
Illusions that ever run tangent
To horizons that ever are blue?

Why do we still find no quiet
In the gardens of repose
When only the soft-moving hours
Breathe lightly above the rose?

Why are the dim lines of yearning
Reflected in our eyes?
Are we no longer children
Under the mellowing skies?

It's just the way of an old world
In which we cannot learn
How near the song is ended
When the careless candles burn.

For all our unrest is a wishing
For an infinite vale set apart;
A place to catch up with the rapture
We couldn't quite hold to our heart.

"COLLY" Strain Silver Black Foxes

Large, Healthy, Prolific Foxes Born and Raised in Montana for Many Generations

Our Booklet, "Silver Fox Farming," Will Be Mailed to You on Request

Write for It

Beartooth Silver Fox & Fur Farms
Breeders of Better Fur
Red Lodge, Mont.

SERVING---

118 Montana Cities and Towns

THE MONTANA POWER CO.

Sec. 435½, P. L. & R.
U. S. POSTAGE
PAID
Helena, Montana
Permit No. 27

MONTANA WILD LIFE

Montana Sportsmen's Association

1931 MEMBERSHIPS

THE Anaconda Anglers' Club, Billings Rod and Gun Club and Red Lodge Rod and Gun Club have sent in their 1931 memberships. From present indications there will be abont 40 clnbs affiliated with the association this year. More clubs are realizing that organization and co-operation are becoming more necessary each year. The fnture of the wild life of Montana undoubtedly depends upon the co-operation of the sportsmen. It is hoped that when carrying on their membership drives the clubs will make every attempt to secure other memberships shown on the schedule printed below. During the past 30 days A. C. Baumgartner of Great Falls has taken out an individnal yearly membership of $1 and S. G. Tonkin, president of the Billings Rod and Gun Club, has taken out an individual life membership of $25. Many business firms will be glad to support the association in helping to perpetuate the wild life of Montana.

SCHEDULE OF MEMBERSHIP DUES

Clubs with 300 members or more, $50.00
Clnbs with 250 to 299 members, $45.00
Clubs with 200 to 249 members, $40.00
Clubs with 150 to 199 members, $35.00
Clubs with 100 to 149 members, $30.00
Clubs with 75 to 99 members, $25.00
Clubs with 50 to 74 members, $20.00
Clubs with 25 to 49 members, $15.00
Clubs with less than 25 members, $10.00
Individual memberships (not included in clnbs) ..... $ 1.00
Life membership $25.00
Assisting membership (indivdual) $ 5.00
Associate membership (individual or firm) $10.00
Sustaining membership, (individual or firm) $25.00
Contributing membership (individual or firm) $50.00
Promoting membership (individual or firm) $100.00

Club memberships are due and payable not later than June 1 of the current year.

Club memberships are to be based npon the number of paid in members as of June 1 or the membership of the previous year. If the dues paid on or before June 1 do not cover the membership of any club as of Dec. 1, then snch clubs shall remit the proper amount to cover all additional members not included in their previons remittance.

NEW CLUB AT CUT BANK

SECRETARY B. F. Gerry will be in Cut Bank Feb. 18 helping to organize a new club. A great deal of enthusiasm has already been displayed by the sportsmen in that territory and it is expected that Cut Bank will have a live organization.

First Sight of the West

I'M OUT in the West, where the sun shines down
From a Maxwell Parish sky
That strikes the canyon crimson
As it piles the distance high.
Where the twisted pines on the mountain top
Bow down to the northern gale,
And the rugged rocks mount purple gnard
Over the wooded vale.

Where the rivers start from their beds of ice
As pale as a fog at sea,
And clear as the bowl of a crystal cup,
And cold as eternity.
Where the shadows play throngh the netted trees
Like the tones of a Paisley shawl,
And the odor of sage on the open plain
Creeps up to the mountain wall.

I'm out in the West, with a horse to ride
Where the trails are calling me
To claim the beauty and the wealth
Of sun and sky and tree!
At home I live with the works of man,
Where the pavement spurns the sod,
But here for a month I'm a pioneer
In quest of the works of God!

SECRETARY'S COLUMN

DUE to an unusual amount of interest being displayed by the sportsmen and clubs over the entire state the association has been called upon to do an unusual amount of work for this time of year. For this reason it is very necessary that membership dues be paid as soon as possible or it will not be possible to carry on the work already scheduled for the next few months.

It will be greatly appreciated if clubs wishing the wild life pictures and other assistance will notify the secretary at an early date, so that arrangements can be made with other clubs in the territory, as much time can be saved as well as considerable expense.

Minntes of the annnal meeting held at Helena on January 9 and 10 will be mailed to affiliated clubs in the near future.

Many people throughont the state do not fully realize the tremendons amonnt of work necessary in propagating fish and game nntil they have seen the motion pictures of wild life of Montana. They are not only enjoyed by the school pupils and general public but have considerable educational value.

MANY SEE PICTURES

SINCE January 1 the motion pictures of wild life of Montana have been shown as follows: Helena, annual meeting of the association, legislators, Eagles lodge; Harlowton, school pupils and Musselshell Valley Sportsmen's Association; Lewistown, schools and general public; Stanford, schools and Stanford Rod and Gnn Club; Choteau, schools and general public; Great Falls, schools and general public; Big Timber, schools and Big Timber Rod and Gun Clnb; Belgrade, schools and general pnblic. Many meetings are already planned for the next two months and many requests are being received from the schools throughout the state to have these pictures shown. Arrangements can be made by writing B. F. Gerry, secretary of the Montana Sportsmen's Association, Box 477, Missoula, Mont.

ACTIVITY IN EASTERN MONTANA

A GREAT deal of enthusiasm is being displayed by the sportsmen of eastern Montana and it is expected that several new clubs will be organized in that territory during the next few months.

MANY FAVOR LICENSE INCREASE

FIFTY rod and gun clubs throughout the state are in favor of an increase in fishing and hnnting license fees. These clubs represent over 80 per cent of the organized sportsmen of Montana.

MEETING DATES

Feb. 16—Toole County Sportsmen's Association, Shelby.

Feb. 17—Sweetgrass.

Feb. 18—New club at Cut Bank.

Feb. 19—Browning Rod and Gnn Club, Browning.

Feb. 20—Valier Rod and Gun Club, Valier.

April 10—Bozeman Rod and Gun Club, Bozeman.

April 27—Livingston.

THAT MIRROR INCIDENT

A backwoods monntaineer one day found a mirror which a tourist had lost.

"Well, if it isn't my old dad," he said as he looked in the mirror. "I never knew he had his pitcher took."

He took the mirror home, stole into the attic to hide it, bnt his actions did not escape his snspicious wife. That night while he slept she slipped up to the attic and found the mirror.

"Mm-m," she said, looking into it, "so that's the old hag he's been chasin'."—Beartooth Skyline.